Contributions from the Australian Museum.

METHOD OF SUSPENDING THE PALU, OR SO-CALLED "SHARK"-HOOKS, AS DEDUCED FROM A MODEL.

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The misconception that has arisen as to the use of at least some of the "remarkable large wooden hook(s) from Micronesia and Polynesia,"* termed the "Shark-hook," has been dispelled by Mr. C. Hedley, who has shown that the latter is used in the capture of the Palu or "Oil Fish" of the Pacific, and possibly not for Shark-fishing at all. So far, I do not think any description of the method of mounting these hooks on deep sea lines has appeared.

The history of this model is briefly this:—It was given to Mr. H. S. W. Crummer, of the Department of Lands, Sydney, by the well-known traveller and author, Mr. Louis Becke, and by the former given to our President (Hon. Jas. Norton, LL.D., M.L.C.), who generously presented it to the Australian Museum. It is of course quite possible that Mr. Becke may have already described this method in one of his numerous writings, but I am ignorant of the fact. The model is from Nieue, or Savage Island.

In explaining the method of Palu fishing at the Ellice Group, Hedley has given† a very full description of these hooks, with an account of their manufacture, history, and distribution. The distribution of the hook has been supplemented by that of the fish, by Mr. Edgar R. Waite, who states‡ that we now possess records

^{*} Hedley, Mem. Austr. Mus., 1897, iii. Pt. 4, p. 272.
† Mem. Austr. Mus., 1897, iii. Pt. 4, p. 273.
‡ *Ibid.*, 1899, iii. Pt. 9, p. 540.

of the occurrence of the Palu (based on that of the hook), throughout twenty-six degrees of longitude in the Pacific, *i.e.*, from the Gilbert Islands on the east to Manahiki, or Humphrey Island, on the west, or from 175° E. to 160° W., and throughout nineteen degrees of latitude, from about the equator to Nieue, in 19° S. If to this be added the later known occurrence of the hook the distribution may be "extended north of the line to the Marshall Group, thence westward to the Caroline Islands," and Eastern New Guinea, south of the equator.*

The Palu has been identified by Waite as Rurettus pretiosus, Cocco, the "Escolar" of the Canary Islands fishermen, and the "Rovetto" of the Mediterranean, a species extending from the Adriatic on the east to the N. American coast on the west, throughout one hundred degrees of longitude, and twenty-five degrees of latitude, from 25° to 45° N.† It is known to exist bathymetrically to depths as great as four hundred fathoms.

Mr. Waite has also given an account of the method of fishing for Palu, from the graphic pen of Mr. Louis Becke.‡

A remarkably fine series of these V-shaped hooks is now in the Australian Museum, from the gigantic Mortlock Island implement, of seventeen inches in length, and weighing I lb. $15\frac{3}{4}$ oz., to the smallest *Kouboru* of Funafuti, or the baby hook, of the first-mentioned locality, only three and a-half inches long.

The model consists of a two-ply cocoanut-fibre line, to which is joined another fine white two-ply line of a different fibre. To this are attached by loop hitches two outriggers of wood in such a manner that they stand out at a more or less oblique angle to the line, but on opposite sides of the latter. The white line is in one continuous piece from the cocoanut deep-sea line to sinker attachment, and does not pass along either of the outriggers. A still finer line is made fast at the proximal end of each of the latter, and is Mr. Hedley's "cord of attachment," or oukafakana-

^{*} Waite, loc. cit., p. 541. + Id., ibid., p. 539. ‡ Ibid., 1897, iii. Pt. 3, p. 199.

pana; in the actual fishing line, a piece of cocoanut-fibre rope about two feet in length.* In the model this is passed under and over the outriggers to their distal ends, and further secured at the centre of each outrigger by a half-hitch. At the distal ends of the latter these cords of attachment are bound to them by whipping, and then pass to the upper extremity of the major shanks of the hooks, where they are made fast.

In the largest Mortlock Island hook the *oukajakanapana* is terminated by both a knot and an eye for bending on to the main line, but Hedley says that in the Ellice Islands implement a knot only is used; the model agrees with the latter. Another Mortlock Island hook, twelve inches in length, retains both the cord of attachment and outrigger, the former passing along the latter just as in the model, but instead of passing under and over, and with a half-hitch in the centre, it is simply laid against the outrigger and lashed at the centre, otherwise this specimen exemplifies the great accuracy of the model. Unlike that of the seventeen-inch hook, the cord of attachment of this twelve-inch hook terminates in an eye only, and not a knot and an eye.

To the bottom of the line is made fast a piece of bast, which acts as the suspensory of the sinker. The latter consists of a piece of coral carefully ground to the shape of a fender, and secured to its suspensory by a square lacing of the same material.

According to Mr. Louis Becke, the Palu line is made from the very best cocoanut-fibre, four- to six-ply, and the sinker is from three to six pounds.† Thanks to the generosity of Mr. Crummer I am able to exhibit such a line that has actually been in use; this, however, is only a two-ply line.

^{*} Loc. cit., 1897, iii. Pt. 4, p. 276. † Waite, loc. cit., 1897, iii. Pt. 3, p. 200.